

Heersien, whilst Lyell found, in the Belgium Lower Landenien grey marl, a perfect specimen of the *Terebratulina gracilis*,—a well known chalk fossil,—together with *Ostrea (Exogyra) lateralis*, Nyst. Lyell remarks, that the Lower Landenien, at Folx les Caves, rests on the Maestrich chalk.

There is an extensive bed of lignite in Europe of eocene age, which Deshayes says forms a well-determined horizon with the long series of "sables inférieures." "Above the lignite appears a bed of fresh-water and marine shells, the horizon of which I believe to be the same as the lignite formation of the United States. They reveal a singular state of the globe at the commencement of the tertiary period, presenting a vast level region covered by a dense forest, in which palms and oaks grew side by side, interspersed with lakes and rivers and long shallow bays of salt water penetrating to the interior of the continents. This state of the globe was exhibited in Europe and America at the same time, and the land was little elevated above the sea level, except that in America the Appalachian and Rocky mountain ranges stood out from the vast plain.

The Shark River fossils are few in number of species, and generally imperfect casts, with small chalky portions of the shell occasionally remaining. A few of the bivalves have connected valves. About twenty-five species of shells and plants have been collected, of which I think six shells are identical with species of the London Clay and one of the Plastic Clay, *Cyprina Morrisii*.

Catalogue of Shells of Shark River.

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|------------------------------|------------------------------------|
| Mactra ———. | Aturia ziczac, Sowerby. |
| Cyprina Morrisii. | Nautilus Lamarckii, Desh. |
| Dione ———. | Priscofusus ———, Con. |
| Yoldia protexta, C. | Volutilithes mutata, Desh. |
| Axinaea | Surculi annosa, Con. |
| Crassatella | Sycotopus Smithii, Sowerby. |
| Venericardia perantiqua Con. | Onustus extensus, Sowerby. |
| Avicula annosa, Con. | Hippochrenes columbaria? DeFrance. |
| Pinna ———. | Acteonema prisca, Con. |
| Pecten ———. | Architectonica ———. |
| Ostrea ———. | Pleurotomaria perlata, Con. |

Fish.

Cœlorhynchus rectus, Agassiz.

Catalogue of the EOCENE ANNULATA, FORAMINIFERA, ECHINODERMATA and CIRRIPIEDIA of the United States.

BY T. A. CONRAD.

Annulata.

SERPULA, Lin.

- S. ornata*, Lea, Cont. to Geol. 37, 1, 5. Claib.
S. squamulosa, C. J. A. N. S., vii, 149. Claib.

SPIROBIS, Daudin.

- S. tubanella*, Lea, Cont. to Geol. 36, 1, 4. Claib.

DITRUPA, Berkeley.

- D. subcoarctata*, Gabb., J. A. N. S., 2d series, 386, 67, 47. Texas.

Foraminifera.

TRILOCULINA, D'Orbigny.

- U. lineata*, C., n. s.

1865.]

CRISTELLARIA, D'Orbigny.

- C. ? rotella, C., Amer. Journ. Science, ii., 2d series, 399, f. 4. Florida.
Cristellaria ? rotella, D'Orbigny, Prodromus, ii. 406, 1300.

NEMOPHORA, Conrad.

- N. Floridana, (Nummulites) C., Amer. Journ. Sci., ii., 2d series, 399, f. 3.
 Florida.
Cristellaria ? Floridana, D'Orbigny, Prodromus, ii. 406, 1301.

ORBITOLITES, Lam.

- O. (Nummulites) Mantelli, Morton, Org. Rem. Cretac. Group, 45, 5, 9. St.
 Stephens, Ala., S. C., Miss.
Orbitoides Mantelli, D'Orbig., Prodromus, ii. 406.
 O. supera, C.* Vicksburg, Miss.

Echinodermata.

ECHINIDÆ.

SISMONDIA, Desor.

- S. alta, C., Proc. A. N. S., 1865, N. C. Emmons, Geol. N. C., 308, 247, 8.
 S. crustuloides, (Scutella) Morton, Org. Rem. Cretac. Group, 77, 15, 10. S. C.
 Desor., Synop. des Echin. 227.
 S. Lyelli, (Scutella) C., Journ. A. N. S., vii. 152, Ala. Desor., Synop. des
 Echin. 225.
 S. marginalis, C., Proc. A. N. S., 1865, near Charleston, S. C.
 S. pileus-sinensis, (Scutella) Ravenel., Proceed. A. N. S. ii. 97. S. C.
 S. Plana, C. S. C.

MORTONIA, Desor.

- M. Rogersi, (Scutella) Morton, Org. Rem. Cretac. Group, 77, 13, 3. Alabama.
 Desor., Syn. des Echin. 231. Clark Co., Ala.
Laganum Rogersi, Agass., Catal. Syst. 6.
 M. Jonesii, (Scutella) Forbes, Quart. Journ. Geol. Soc., i. 440. Georgia.

MELLITA, Klein.

- M. Caroliniana, (Scutella), Ravenel, Proc. A. N. S. 1, 81. S. C.

MACROPHORA, Conrad.

- M. macrophora, (Scutella), Ravenel, Proceed. A. N. S. 1, 81. S. C.
 M. Raveneli, C. S. C.

* Smaller than the preceding, suborbicular, with an obtusely ovate perforation.

PYRGORHYNCUS, Agass.

- P. Gouldii, Bouvé, Proc. Bost. Soc. Nat. Hist., ii. 192, and iv. 2. Desor.,
 Synop. des Echin. 299. Georgia.
Nuc. Mortoni, Conrad, Journ. Acad. Nat. Sci., ii. series, 40.

CCELOPLEURUS, Agass.

- C. depressus, C., n. s. S. C.
 C. infulatus (Echinus) Morton, Org. Rem. of Cretac. Group, 75, 10, 7. Desor.,
 Syn. des Echin. 98, S. C.

CLYPEASTER, Lam.

- C. Jonesii, (Scutella) Forbes, Quart. Journ. Geol., i. 440. Desor., Syn. des
 Echin. 243. Georgia.

* Smaller than the preceding and comparatively thicker, without the raised central point. Diameter 13-20 inch. This species is readily distinguished by the convex centre, and is limited to the Oligocene strata.

ECHINIANTHUS, Breynius.

- E. Mortonis, (Pyrgorhyncus) Mich. Rev. et Mag. de Zool., 1850, 2. Desor., Synop. des Echin. 295. Miss.

CASSIDULUS, Lam.

- C. amygdala? Desor., Synop. des Echin. lxx.
 C. Conradi, (Catopygus) Couper, Journ. Acad. Nat. Sci., iv. 2d series, 39, 1, 9. Georgia.
 C. Lyelli, (Nucleolites) Con., Journ. Acad. Nat. Sci., ii. 2d series, 40, 1, 14. Georgia.
 C. patelliformis, (Catopygus) Bouvé, Bost. Soc. Nat. Hist., iv. 2. Georgia.
Cassidulus patelliformis, Desor., Synop. des Echin. 290.

HEMIASTER, Lam.

- H. Conradi, Bouvé, Bost., Soc. Nat. Hist., v., 2d series, 3. Georgia. Desor., Synop. des Echin. 373.

DISCOIDEA, Lam.

- D. Haldemani, C., Journ. Acad. Nat. Sci., iv., 2d series, 40, 1, 12. Georgia.

ECHINOCARDIUM, Gray.

- E. orthonotus, (spatangus) C., Proceed. A. N. S. 1, 327. Virg.
Amphidetus Virginianus, Forbes, Quart. Journ. Geol. Soc., i. 425.
Echinocardium Virginianum, Desor., Synop. des Echin. 408.

Cirripedia.

BALANUS, Lin.

- B. humilis, C., Amer. Journ. Sci., ii., 2d series, 400, f. 4, Florida.
 B. peregrinus, Morton, Organic Rem. of Cretac. Group, 72. S. C.

Descriptions of new species of ECHINIDÆ.

BY T. A. CONRAD.

SISMONDIA, Desor.

S. ALTA. Suborbicular; margin thin, disk gradually rising towards the centre and concave in outline; central portion elevated and obliquely flattened at the summit; ambulacra lanceolate, nearly closed; anus subquadrangular, thin, position nearer the mouth than the posterior end; margin thin, uncalated.

Scutella, ——— Emmons, Geol. of North Carolina.

S. MARGINALIS. Subovate or suborbicular, depressed; ambulacra lanceolate; central prominence rounded, margin thicker than the submarginal area of the disk; truncated posteriorly, emarginated; anus subquadrangular, minute, situated near the margin, which is thickened beneath. Diameter $\frac{7}{8}$ inch. Height $\frac{1}{2}$ inch, S. C.

S. PLANA. Discoid, subovate, very thin, margin slightly thickened, disc convex depressed, summit anterior to the middle; ambulacra broadly lanceolate, nearly closed; anus distant from the margin, but nearer to it than to the mouth. Longitudinal diameter $\frac{11}{16}$ of an inch; transverse diameter $\frac{9}{16}$ inch. S. C.

Descriptions of three new species of Exotic UNIONES.

BY ISAAC LEA.

UNIO WRIGHTII. Testâ plicatâ, latâ, ad umbones inflatâ, valdè inæquilateralî, posticè acuto-angulatâ, anticè rotundatâ; valvulis crassiusculis, anticè crassioribus; natibus subprominentibus et crebrè plicatis; epidermide tene-
 1865.]